We pause one year later...

To honor the memory
of the individuals who lost their lives
on and following the events of 11 September 2001.

Welcome

Restoration Advisory Board Meeting

Robins Air Force Base

12 September 2002

Restoration Advisory Board Meeting
Robins Air Force Base

12 September 2002

Theme: ***Preventing Future Contamination through Pollution Prevention (P2)***

Welcome and Program Introduction

Mr. Steve Coyle

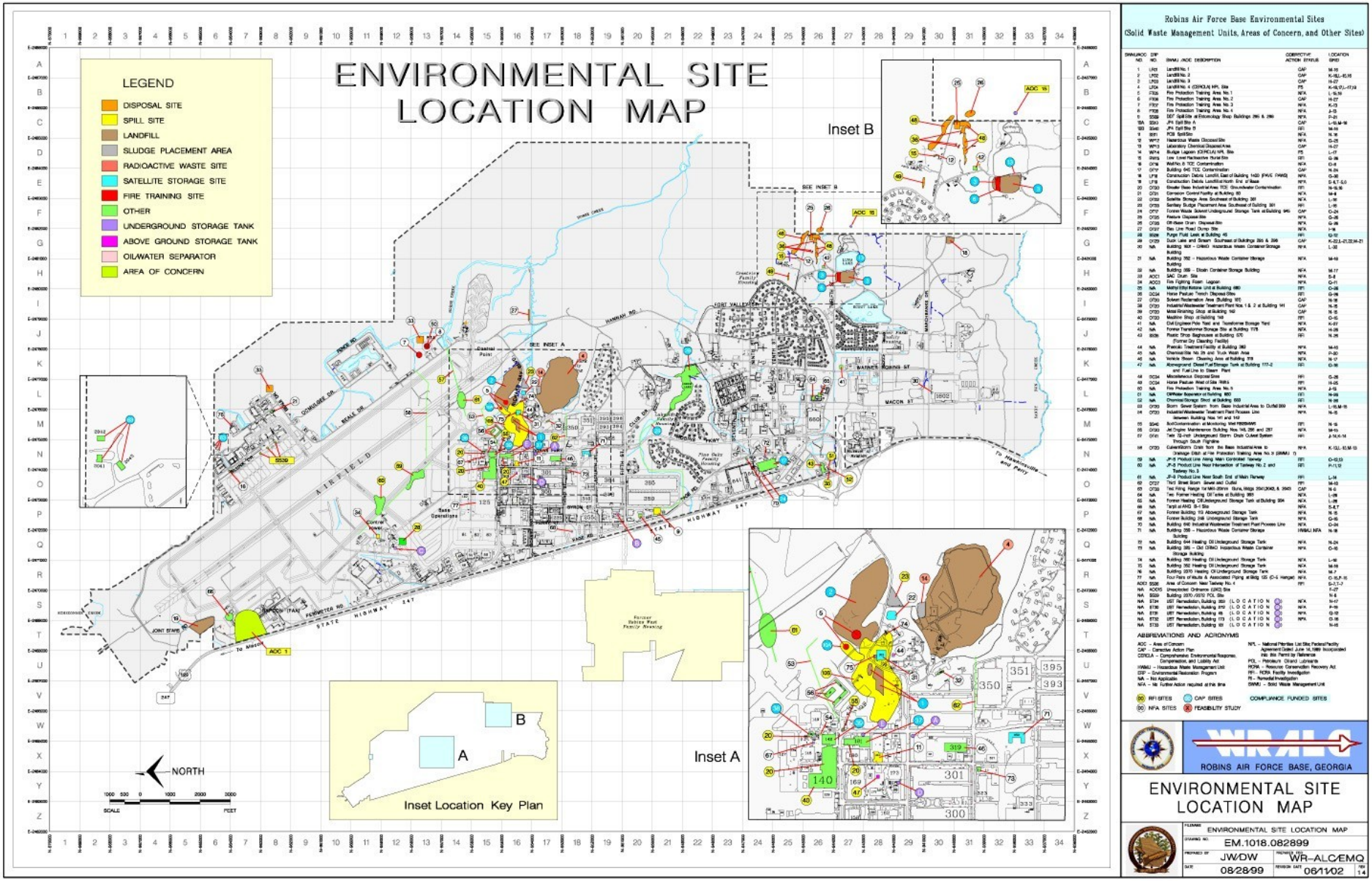
Installation Co-Chair

ROBINS FOCUS
Base sweeps fourth environmental award since 1993
IN UNIFORM
ROBINS AFB CALENDAR

Environmental Restoration Program (ERP) Update

Mr. Kevin Long, WR-ALC/EMQ

September 12, 2002



Robins Air Force Base Environmental Sites
(Solid Waste Management Units, Areas of Concern, and Other Sites)

SWMU/AOC NO.	DSP NO.	SWMU / AOC DESCRIPTION	CORRECTIVE ACTION STATUS	LOCATION GRID
1	LF01	Landfill No. 1	CAP	M-16
2	LF02	Landfill No. 2	CAP	K-15/L-15/16
3	LF03	Landfill No. 3	CAP	H-27
4	LF04	Landfill No. 4 (CERCLA) NPL Site	FS	K-16/17/L-17/18
5	FT05	Fire Protection Training Area No. 1	NFA	L-15/16
6	FT06	Fire Protection Training Area No. 2	CAP	H-27
7	FT07	Fire Protection Training Area No. 3	NFA	K-19
8	FT08	Fire Protection Training Area No. 4	NFA	J-20
9	SS09	DDF Spill Site at Entomology Shop Buildings 286 & 289	NFA	P-21
10A	SS10	JP4 Spill Site A	CAP	L-15/M-16
10B	SS40	JP4 Spill Site B	RFI	M-16
11	SS11	POL Spill Site	NFA	N-16
12	WP12	Hazardous Waste Disposal Site	NFA	G-26
13	WP13	Laboratory Chemical Disposal Area	CAP	H-27
14	WP14	Sludge Lagoon (CERCLA) NPL Site	FS	L-17
15	PW15	Low Level Radioactive Burial Site	RFI	G-26
16	GW16	WellNo. 6 TCE Contamination	NFA	G-8
17	GW17	Building 640 TCE Contamination	CAP	N-24
18	LF18	Construction Debris Landfill, East of Building 1420 (PAVE PAWS)	NFA	G-30
19	LF19	Construction Debris Landfill North End of Base	NFA	E-6,7 /J-5
20	OT20	Shaefer Base Industrial Area TCE Groundwater Contamination	RFI	N-15,16
21	OT21	Corrosion Control Facility at Building 60	NFA	M-9
22	OT22	Satellite Storage Area Southwest of Building 301	NFA	L-16
23	OT23	Sanitary Sludge Placement Area Southeast of Building 301	RFI	L-16
24	OT27	Former Waste Solvent Underground Storage Tank at Building 640	CAP	N-24
25	OT25	Pesticide Disposal Site	NFA	G-26
26	OT26	Off-Base Drain Disposal Site	NFA	G-26
27	OT27	Bay Line Road Dump Site	NFA	I-18
28	SS28	Purge Fluid Leak at Building 45	RFI	Q-12
29	OT29	Duck Lake and Stream Southeast of Buildings 286 & 289	CAP	K-22,L-21,22,M-21
30	NA	Building 804 – DRMO Hazardous Waste Container Storage Building	NFA	L-20
31	NA	Building 352 – Hazardous Waste Container Storage Building	NFA	M-19
32	NA	Building 289 – Drum Container Storage Building	NFA	M-17
33	AOC1	SAC Drum Site	NFA	E-8
34	AOC3	Fire Fighting Foam Lagoon	NFA	Q-11
35	NA	Methyl Ethyl Ketone Unit at Building 680	RFI	O-26
36	OT24	Horse Pasture Trench Disposal Sites	RFI	G-26
37	OT30	Solvent Reclamation Area (Building 161)	CAP	N-18
38	OT31	Industrial Wastewater Treatment Plant Nos. 1 & 2 at Building 141	CAP	N-15
39	OT33	Metal Finishing Shop at Building 140	CAP	N-15
40	OT30	Machine Shop at Building 148	RFI	O-15
41	NA	Civil Engineer Pole Yard and Transformer Storage Yard	NFA	K-27
42	NA	Former Transformer Storage Site at Building 1178	NFA	H-28
43	SS28	Plastic Shop Bags/Leaves at Building 575 (Former Dry Cleaning Facility)	RFI	N-28
44	NA	Pesticide Treatment Facility at Building 383	NFA	M-15
45	NA	Chemical Site No. 29 and Truck Wash Area	NFA	K-20
46	NA	Vehicle Steam Cleaning Area at Building 318	NFA	N-17
47	NA	Aboveground Diesel Fuel Storage Tank at Building 177-2 and Fuel Line to Steam Plant	RFI	O-16
48	OC34	Miscellaneous Disposal Sites	RFI	G-26
49	OC34	Horse Pasture West of Site 7W15	RFI	H-25
50	NA	Fire Protection Training Area No. 5	NFA	J-15
51	NA	Oil/Water Separator at Building 800	RFI	N-28
52	NA	Chemical Storage Shed at Building 600	RFI	N-28
53	OT29	Storm Sewer System from Base Industrial Area to Outfall 009	NFA	L-15,M-15
54	OT30	Industrial Wastewater Treatment Plant Process Line between Building Nos. 141 and 142	NFA	N-15
55	SS40	Soil Contamination at Monitoring Well FB09MW05	RFI	N-16
56	OT30	Jet Engine Maintenance Building Nos. 145, 295 and 297	NFA	M-15
57	OT01	78"/ 72-inch Underground Storm Drain Outlet System Through South Flightline	RFI	K,M-14
58	OT20	Culvert/Storm Drain from the Base Industrial Area to Drainage Ditch at Fire Protection Training Area No. 3 (SWMU 1)	NFA	K-15/L-15,M-15
59	NA	JP-5 Product Line Along Main Connection Taxiway	RFI	O-15/16
60	NA	JP-5 Product Line Near Intersection of Taxiway No. 2 and Taxiway No. 3	RFI	P-11/12
61	NA	JP-5 Product Line Near South End of Main Runway	RFI	L-14
62	OT27	Third Street Storm Sewer and Outfall	RFI	M-13
63	OT30	Test Firing Range Complex (Bldgs. 3304,3306, & 3940)	CAP	H-5
64	NA	Two Former Heating Oil Tanks at Building 365	NFA	L-18
65	NA	Former Heating Oil Underground Storage Tank at Building 304	NFA	L-18
66	NA	Target at ANG Site	NFA	E-6,7
67	NA	Former Building 113 Aboveground Storage Tank	NFA	N-15
68	NA	Former Building 248 Underground Storage Tank	NFA	O-16
70	NA	Building 640 Industrial Wastewater Treatment Plant Process Line	NFA	O-24
71	NA	Building 289 – Hazardous Waste Container Storage Building	HWMU NFA	N-18
72	NA	Building 644 Heating Oil Underground Storage Tank	NFA	N-24
73	NA	Building 285 – Old DRMO Hazardous Waste Container Storage Building	NFA	O-16
74	NA	Building 160 Heating Oil Underground Storage Tank	NFA	L-16
75	NA	Building 352 Heating Oil Underground Storage Tank	NFA	M-19
76	NA	Building 2070 Heating Oil Underground Storage Tank	NFA	M-7
77	NA	Four Pairs of Inlets & Associated Piping at Bldg 125 (F-4 Hangar)	NFA	O-16,P-16
ADC2	SS26	Area of Concern Near Taxiway No. 4	RFI	G-7,7-7
NA	AOC5	Unexploded Ordnance (UXO) Site		F-27
NA	SS39	Building 2070 /2072 POL Site		N-6
NA	ST34	UST Remediation, Building 304 (LOCATION	NFA	N-17
NA	ST36	UST Remediation, Building 370 (LOCATION	NFA	P-19
NA	ST35	UST Remediation, Building 45 (LOCATION	NFA	Q-12
NA	ST32	UST Remediation, Building 173 (LOCATION	NFA	O-16
NA	ST33	UST Remediation, Building 60 (LOCATION	NFA	N-16

ABBREVIATIONS AND ACRONYMS

AOC – Area of Concern
CAP – Corrective Action Plan
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act
HWMU – Hazardous Waste Management Unit
IRP – Environmental Restoration Program
NA – Not Applicable
NFA – No Further Action required at this time
NPL – National Priorities List Site; Federal Facility Agreement Dated June 14,1989 Incorporated Into this Permit by Reference
POL – Petroleum Oil and Lubricants
RCRA – Resource Conservation Recovery Act
RFI – RCRA Facility Investigation
RI – Remedial Investigation
SWMU – Solid Waste Management Unit

RFI SITES (00) | CAP SITES | COMPLIANCE FUNDED SITES
NFA SITES (00) | FEASIBILITY STUDY (X)

WRALC
ROBINS AIR FORCE BASE, GEORGIA

ENVIRONMENTAL SITE LOCATION MAP

FILENAME	ENVIRONMENTAL SITE LOCATION MAP
DRAWING NO.	EM.1018.082899
PREPARED BY	JWDW
REVIEWED BY	WR-ALC/EMQ
DATE	082899
REVISION DATE	061102
REV	14

Restoration Ecology: Protecting Resources Through Conservation

Dr. Bob Sargent

Chief, Environmental Resources Division

September 12, 2002

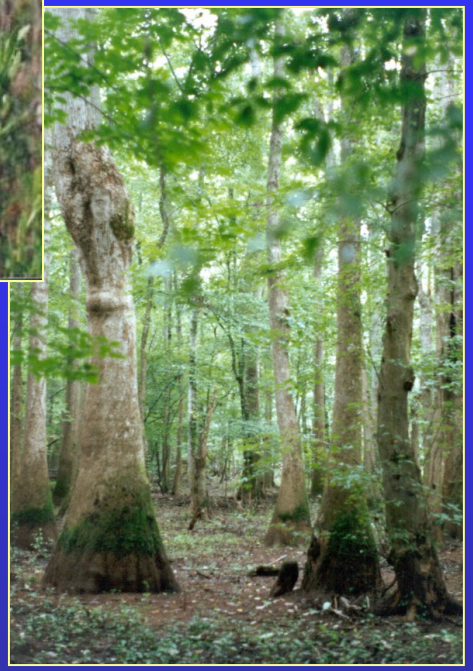
Overview

- Conserving Resources on Robins Air Force Base
- Conservation and Restoration: A Natural Partnership
- Teamwork Success Stories
  - Reducing contaminants
  - Duck Lake restoration
  - Landfill restoration
  - NPL site: biologically rich
  - Creating wildlife habitat
  - Protecting resources during restoration
- Summary

Conserving Resources on Robins Air Force Base

Rare Plant Preservation

Wildlife Management



Wetland Protect

Conserving Resources on Robins Air Force Base

BASH

Urban Forestry

BASH Management

Hunting & Fishing Programs

Non-game Wildlife Management

Conserving Resources on Robins Air Force Base

Partnerships with other state, federal and civic organizations

Conservation and Restoration: A Natural Partnership

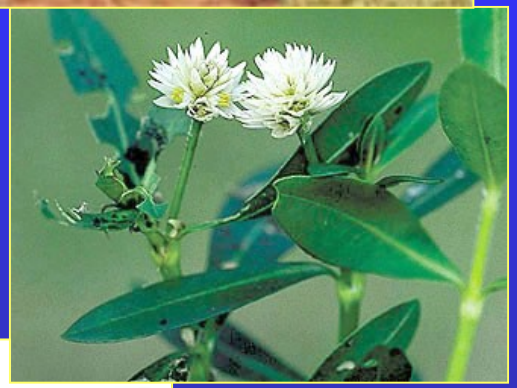
DUCK LAKE BEFORE

Duck Lake Conservation and Restoration: A Natural Partnership

- **Provided contouring informa**
  - **Deeper edges help control exotic aquatic weeds e.g. alligatorweed**

- **Installed fish attractors**

- **Restocked lake with fish**
  - **Proper predator-to-prey ratio**

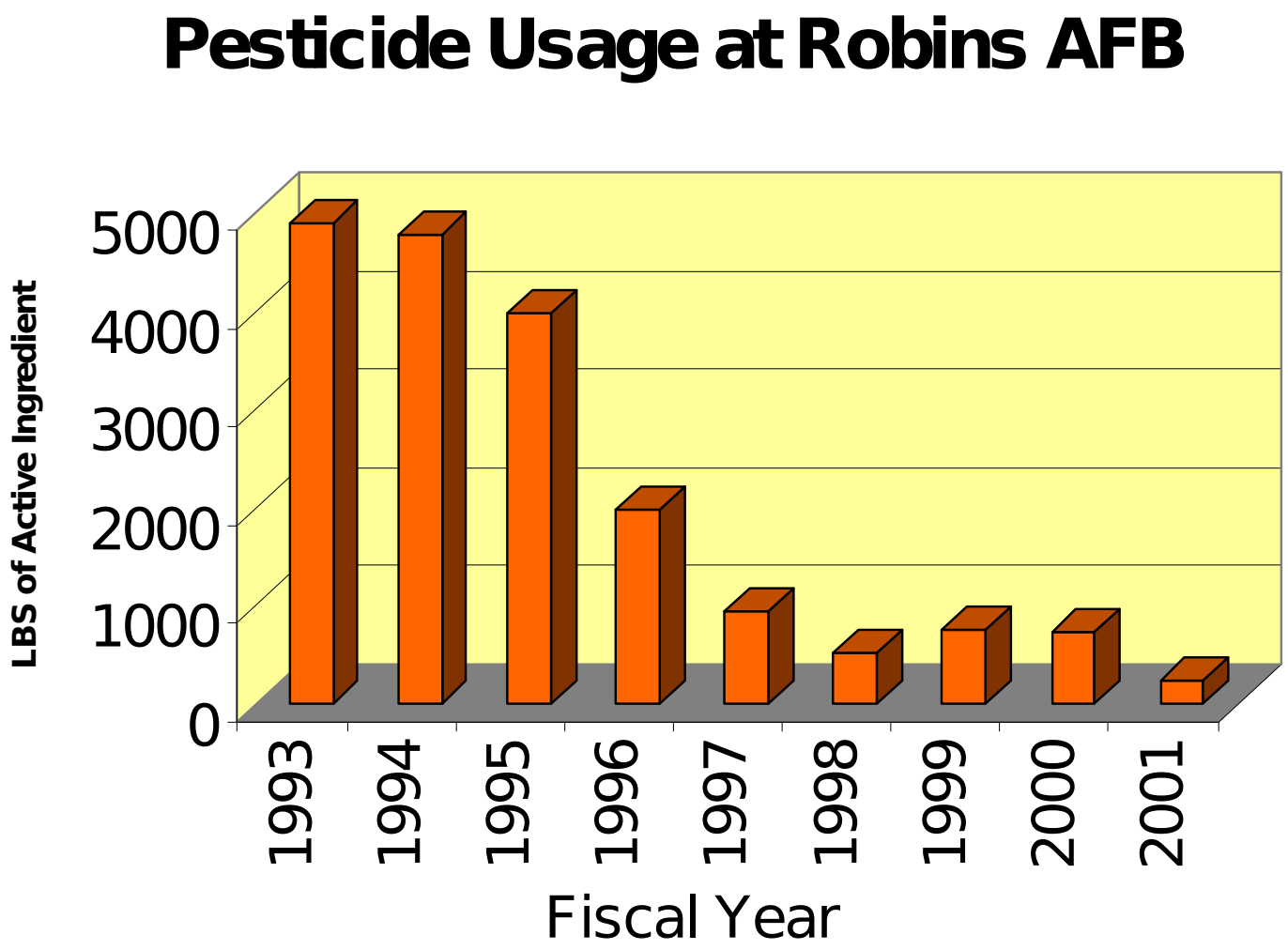


- **Biological weed cont**
  - **Grass carp**
  - **Flea beetles**

Conservation and Restoration: A Natural Partnership

DUCK LAKE AFTER

Reducing Contaminants



Reducing Contaminants

- Golf Course
  - Accounts for approx. 50% o
    pesticide usage on Robins
  - Required to use low toxicity
    pesticides
  - EM requires quarterly reports

- Worked with EM to create “n
  zones
  - Improves wildlife habitat
  - Protects state-listed Ocmulgee
    skullcap

Reducing Contaminants

- **Fish tissue sampling and analysis**
- **Used results to create an**

nure

ENVIRONMENTAL RESOURCES DIVISION

A GUIDE FOR EATING FISH FROM ROBINS AFB WATERS

Reducing Contaminants

- **Integrated Pest Management: emphasis on surveillance and natural pest control methods**

- **How it works:**
  - **Survey and monitor problem areas**
  - **Evaluate data**
  - **Make recommendations: use biological and mechanical control methods first**
  - **Only use low toxicity chemicals as last resort**

Landfill Restoration

- **Landfill 3**
- **Reduced mowing**
- **Planted wildflowers**
- **Provides early successional wildlife**

Landfill Restoration

- **Landfill 4**
- **Analyzed pine trees for contaminants before being sold for pulp**
- **Marketed pulp wood- proceeds used to plant more trees**

NPL Site: Biologically Rich

- **Habitat for numerous wildlife:**
  - **Several alligators**
  - **Ducks and geese (can be a BASH conc**
  - **Even a nutria!**

Creating Wildlife Habitat Via Restoration

- **Weir built causing stand of trees to become flooded**
- **Dead trees are not worthless!**
- **Created nesting, foraging and basking habitat for several species**
  - **Red-headed woodpecker**
  - **Eastern bluebird**
  - **Great blue heron**
  - **Snapping turtles, sliders and many other reptile and amphibian species**

Creating Wildlife Habitat

Protecting Resources During Restoration

- **Minimized the number of trees removed from the horse pasture**
- **Conducted rare plant survey: discovered Harper's bog heartleaf on adjoining property**
- **Prevented road from disturbing rare plant population**
- **Protected wetlands from sedimentation during road establishment and well installation**

Summary

- **Robins supports a highly biodiverse community of natural resources**

- **USAF mission includes conservation of these resources**

- **Restoration requirements do not exclude those of conservation**

Questions?

P2 Initiatives: Pad 8 Flight Line Project and Bullet Trap

Mr. Jim Reese, P.E.

P2 Project Engineer, Pollution Prevention Division

September 12, 2002

PSOA at Pad 8

- Process Specific Opportunity Assessment (PSOA) for Pad 8 vacuum waste
- AFMC Compliance Through Pollution Prevention (CTP2)
- One of most expensive waste streams
- Generates 500 gallons per week
- $400K per year disposal cost

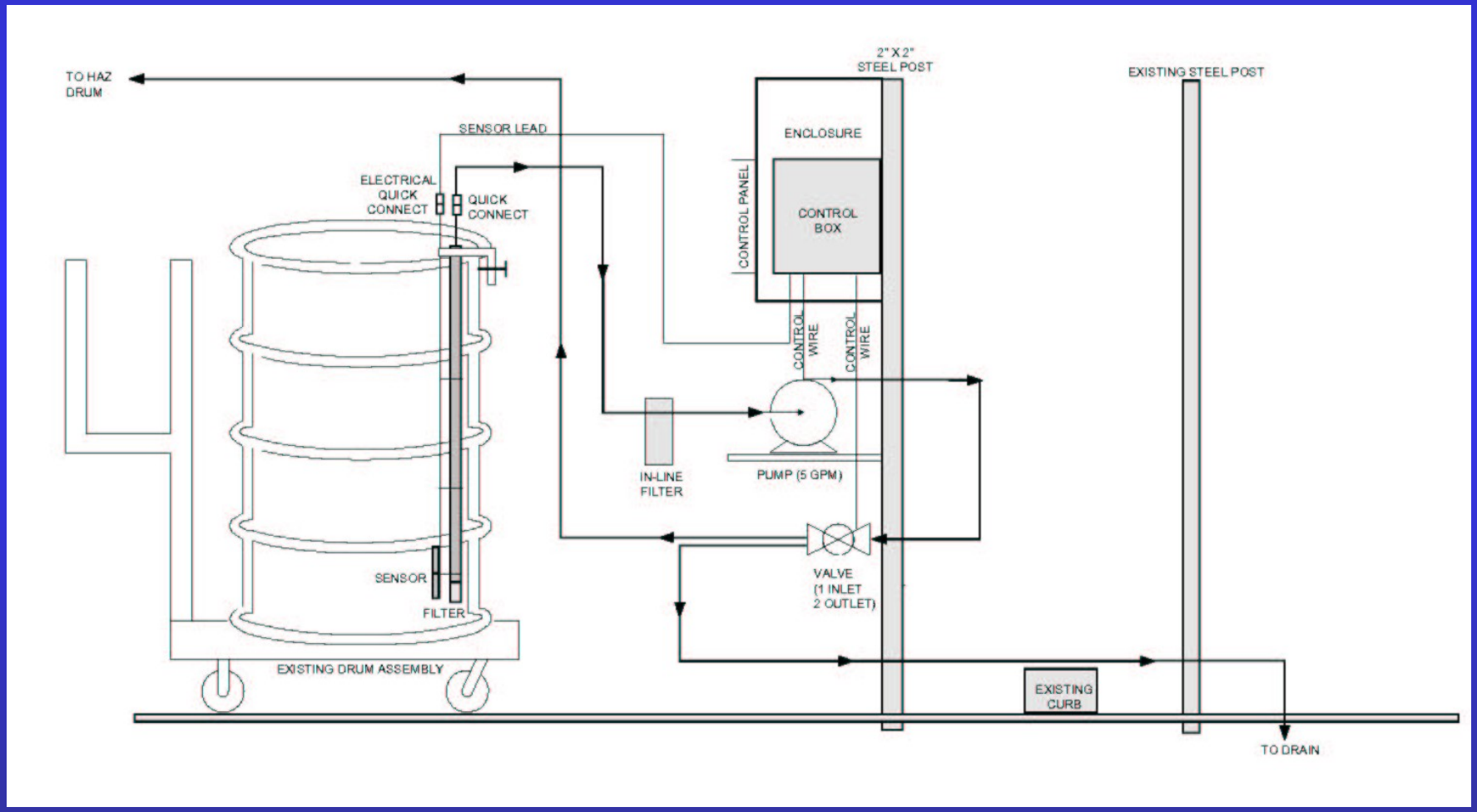
Typical Vacuum Unit

Previous Method of Servicing Vacuum Units

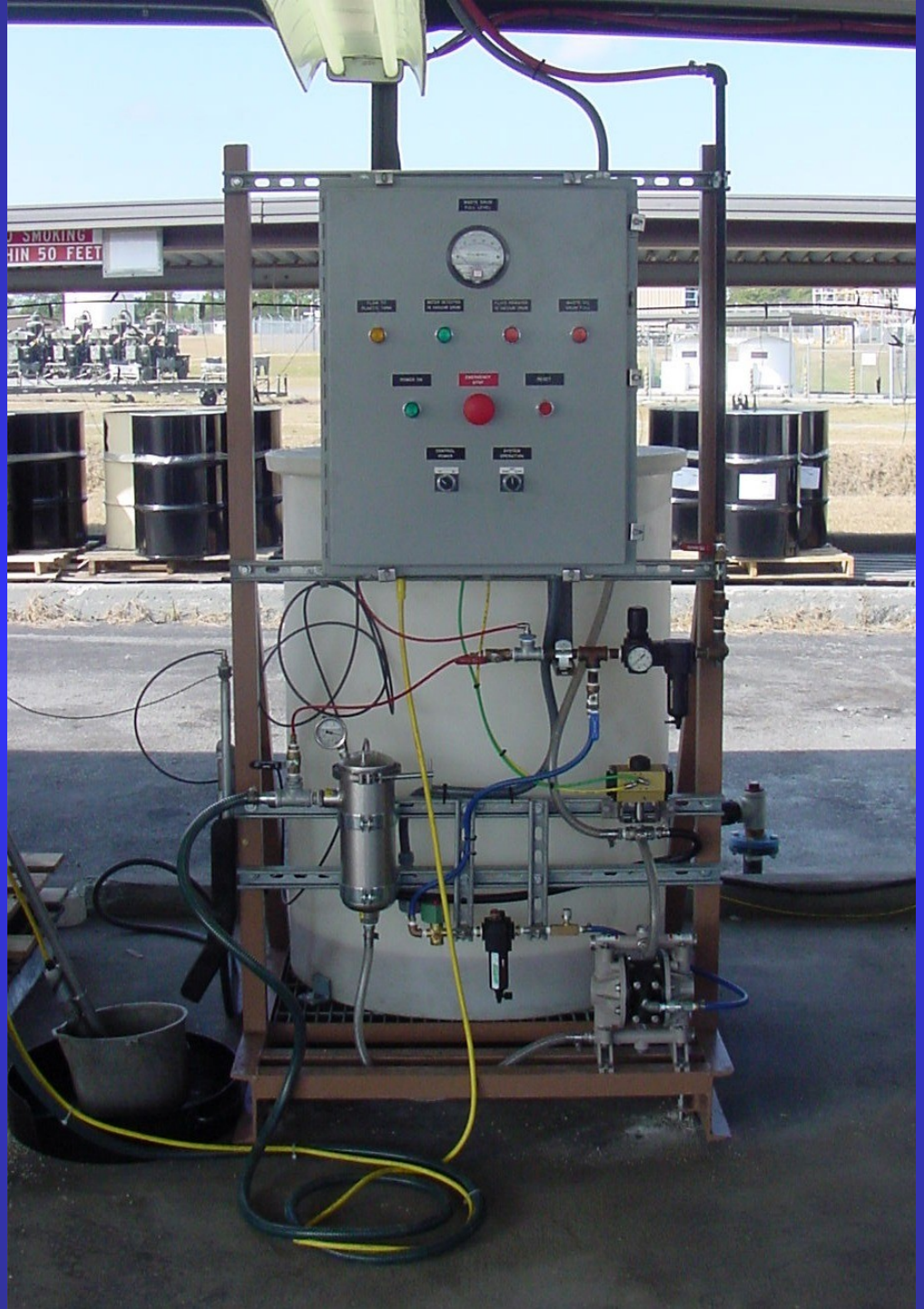
PSOA Conclusions

- Separation of oil/water phase and disposal of water in IWTP best choice
- Separation required to occur in vacuum units themselves as the initial collection containers
- Recommended action: Develop prototype separation unit

Prototype Schematic



Prototype Unit Ready for Installation



Prototype Unit During Routine Operation

General Stevenson visits Pad 8

Cost Savings Realized

- Since Start-up (March 2002) through August 2002
  - 1,545 gallons of water diverted
  - $6,684 in hazardous waste disposal cost saved
  - Annualized estimate of waste profile shows payback in <5 years

The Next Step

- Contract underway to perform PSOA for solvent elimination
- Review processes to eliminate solvents from oily wastes
- Divert “Used Oil” from the vacuum units to tanks for resale

Install Bullet Trap at Small Arms Range

- Shoot over 1/4 million lead rounds into dirt each year
- No leaching yet but concern for future
- P2 funding ($300K) provided by EM
- Ensures proper training for Security Police

7
15
SEP 5 2002

Picture of Bullet Trap from manufacturer

Compliance Through P2

Mr. Richard Slife
Chief, Environmental, Safety and Occupational Health
Maintenance Directorate

OVERVIEW

- Weapon System Compliance Through Pollution Prevention Group (WS CTP2)
- Current Technology Programs
  - Coatings
  - Coatings Removal
  - Plating
- Future Technology Programs
- Summary

WEAPON SYSTEM COMPLIANCE THROUGH POLLUTION PREVENTION GROUP

- Dedicated group, 1 Aug 2002
  - Looking for compliance avoidance through P2 opportunities
  - Four environmental engineers
  - One environmental specialist

- Managing over $5,000,000 in engineering programs addressing environmental issues
  - Coatings
  - Coatings removal
  - Plating

COATING INITIATIVES

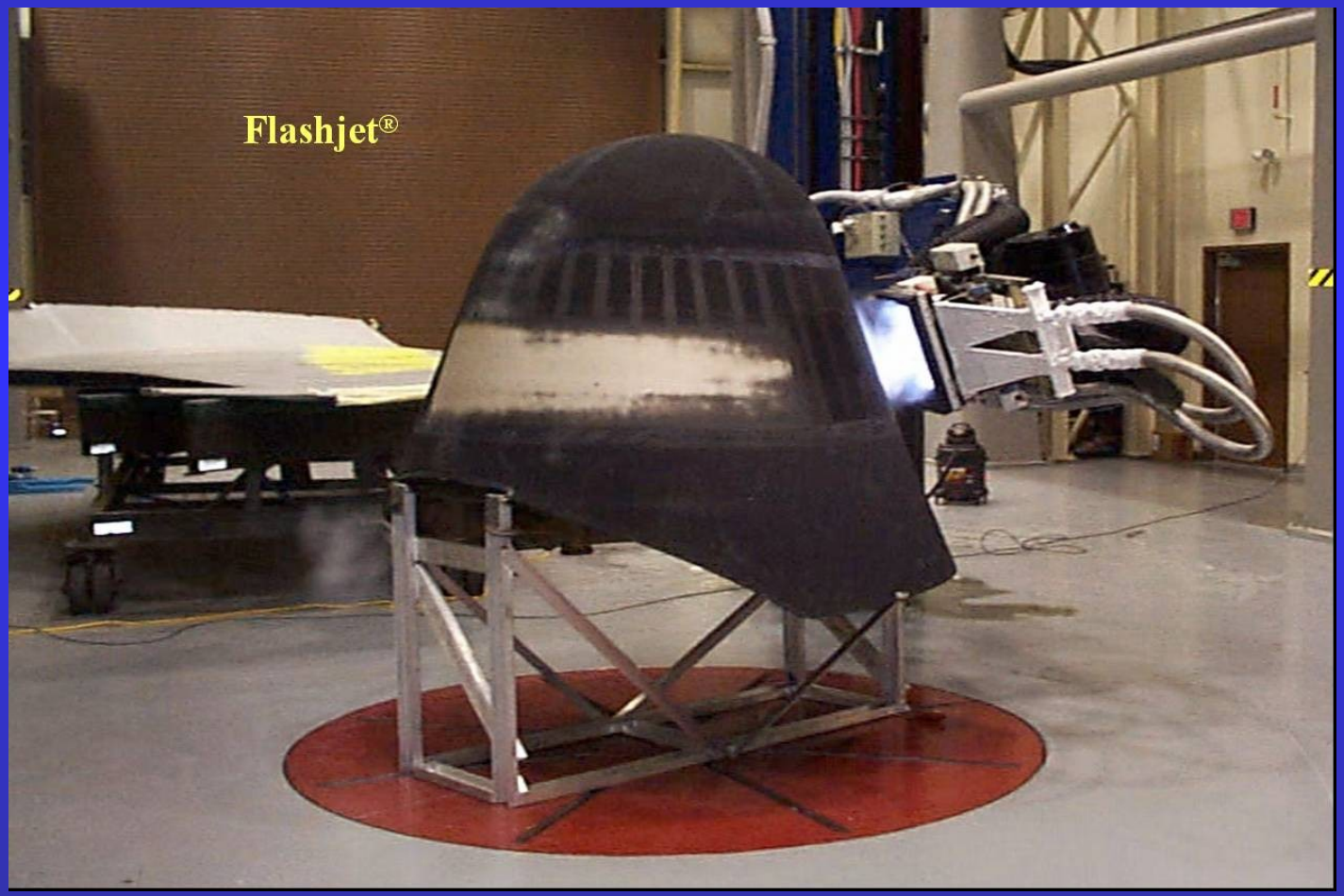
- Zero volatile organic compounds topcoat
- Advanced Performance Coating
- UV cure touchup coating

C-17 Advanced Performance Coating

COATINGS REMOVAL INITIATIVES

- Non-residue dry media blast process
  - Current process leaves residue requiring wipe solvent
- FlashJet
  - Light energy used for stripping radomes and other composite components
- Alternative blast process for plating shop
  - Current processes generate highest amount of solid waste
  - New process will be faster, better, and media is recyclable

FLASHJET®



COATINGS REMOVAL INITIATIVES

- Hand-held laser stripping
  - Small area depaint to eliminate chemicals and hand sanding
- Selective topcoat removal
  - Barrier coating to encapsulate hazardous materials on aircraft
  - Up to 97% of structure does not need to be stripped

BARRIER COATING

BARRIER COATING

- Selective stripping benefits
  - Eliminating of most hazardous materials
  - Manpower and materials savings from elimination of various processes
  - Protects the integrity of aircraft structure

PLATING
Plating Shop PSOA

- Improve operations/production
- Minimize/control multi-media emissions of pollutants
  - Hazardous waste generation
  - Hazardous air emissions
  - Wastewater generation and treatment

PLATING
Plating Shop PSOA

- Reduce environmental monitoring labor requirements
- Proactively meet current and future regulations through Compliance Through P2 (CTP2) initiatives
- Provide software tool for long-term prediction and management of wet processes

PLATING
Qualification of Plating Shop Alternatives

- Determines all internal & external impacts on success of implementation
  - Develop test protocols for technical aspects
  - Obtain management buy-in
  - Set optimal timing schedule for implementation
  - Secure funding resources for further demonstration/validation & implementation phases
  - Integrate implementation into outyear base & EM planning channels
- PLATO ® software for modeling scenarios

SUMMARY

- WS CTP2 is aggressively addressing all materials and processes for P2 opportunities
- Current and future programs will reduce future compliance burden
- The bottom line - We are being proactive

New Business and Program Closing

Mr. Steve Coyle
Installation Co-Chair

Next RAB Meeting

09 January
2003

Don’t forget…

Please complete the *meeting evaluation and feedback form*

and either leave at your place or

give it to Ms. Logue.

Please recycle...

Recycle your name tag and lanyard by leaving them at your place...

we will collect and reuse them at the next RAB meeting.

Thank you!